



June 22, 2015

RECEIVED

JUN 23 2015

**LEGISLATIVE ENVIRONMENTAL
POLICY OFFICE**

Gallatin City – County Health Department, 215 W. Mendenhall, Rm.108, Bozeman, MT 59715-3478
Gallatin County Commissioners, 311 West Main Street, Rm. 306, Bozeman, MT 59715-4576
Robbins Septic – Sewer Master, PO Box 591, Manhattan, MT 59741
TLC Landscape & Excavation, Inc., 6020 Kessler Rd, Belgrade, MT 59714
Stephen F. & Jacklyn B. McDonnell, PO Box 130, Three Forks, MT 59752-0130
CHS Inc., Shelly Nauman, 1011 US Highway 212 S, Laurel, MT 59044-0909
Roger & Michelle Evans, 14950 Madison Frontage Rd, Three Forks, MT 59752-9451
Alex Hudson, 444 Two Waters Way, Belgrade, MT 59714-7708
Kristine A., John & Jeff Riggs, 15500 Madison Frontage Rd, Three Forks, MT 59752-9496
Judith L. & J. Howard Mock, 5919 Padre Roberto Rd NW, Los Ranchos, NM 87107-7116
John R. & Christene M. J. McDonnell, 1965 Buffalo Jump Rd, Three Forks, MT 59752
P. J. Hill, 1983 Stagecoach Trail Rd, Manhattan, MT 59741-8275
Bradley W. & Sandra K. Kamerman, 3995 Buffalo Jump Rd, Three Forks, MT 59752-9414
Director, Department of Fish, Wildlife & Parks, via email
Lisa Peterson, DEQ, Director's Office, via email
Environmental Quality Council, Capitol Complex, Helena, MT 59620
Documents Section, State Library, Capitol Complex, Helena, MT 59620
Paul Nicol, DEQ, Director's Office, via email,

Ladies and Gentlemen:

To comply with the Administrative Rules of Montana, 17.4.607(2) and 17.4.609(2), the Department of Environmental Quality (DEQ), prepared the enclosed Environmental Assessment (EA). The attached EA is for the land application of septage, vault toilet-type waste, grease trap waste, and sump pumpings in Gallatin County, Montana.

The purpose of the EA is to inform the public of the proposed action and to seek public participation in the decision-making process. Persons wishing to comment have until the close of business on July 22, 2015, to submit written comments concerning the proposal. DEQ will not make a final decision until after the comment period has ended.

If you wish to comment on this proposed action during the comment period, please do so in writing by mailing your comments to the Waste and Underground Tank Management Bureau, Solid Waste Program, P.O. Box 200901, Helena, MT 59620-0901 or by E-mail to mailbox DEQWUTBcomments@mt.gov.

Sincerely,

Bob McWilliams
Environmental Science Specialist
Waste & Underground Tank Management Bureau

Enclosure: EA – TLC Landscape & Excavation; Robbins Septic - Sewer Master

Steve Bullock, Governor | Tom Livers, Director | P.O. Box 200901 | Helena, MT 59620-0901 | (406) 444-2544 | www.deq.mt.gov

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Permitting and Compliance Division

Waste and Underground Tank Management Bureau

Solid Waste Section

PO Box 200901

Helena, MT 59620-0901

DRAFT ENVIRONMENTAL ASSESSMENT (EA)

SECTION 1.0 – SOLID WASTE SECTION ROLES AND RESPONSIBILITIES:

The Department of Environmental Quality (DEQ), Solid Waste Section (SWS), is responsible for ensuring activities proposed under the Solid Waste Management Act, the Integrated Waste Management Act, the Septage Disposal Licensure Act, and the Motor Vehicle Disposal & Recycling Act are in compliance with current regulations. The Solid Waste Section (SWS) is a part of DEQ's Permitting and Compliance Division, Waste and Underground Tank Management Bureau. The Solid Waste Management Act (75-10-201, MCA), the Septage Disposal and Licensure Law, and the Administrative Rules of Montana (ARM), Title 17, Chapter 50 for Cesspool, Septic Tank, and Privy Cleaners, provide the necessary authority for the SWS to license and regulate septic tank pumpers in the state of Montana. A land application site must first be approved by the county in which the site is located before the request for approval is submitted to the SWS for review and approval. Each licensee is responsible for complying with the regulations and other restrictions and/or requirements put in place by the county in which the land application site is located.

Purpose of the Environmental Assessment:

In accordance with 75-1-102, Montana Code Annotated (MCA), the Montana Environmental Policy Act (MEPA) is procedural and requires the "adequate review of state actions in order to ensure that environmental attributes are fully considered by the legislature in enacting laws to fulfill constitutional obligations; and the public is informed of the anticipated impacts in Montana of potential state actions." According to MEPA, an Environmental Assessment (EA) is a procedural document that communicates the process agencies follow in their decision-making. An EA does not result in a certain decision; but rather, it serves to identify the potential effect of a state action within the confines of existing laws and rules governing such proposed activities so that agencies make balanced decisions. The MEPA process does not provide regulatory authority beyond the authority explicitly provided in the existing statute.

The Septage Disposal and Licensure regulations establish the minimum requirements for the land application of septage wastes. The EA is the mechanism that DEQ uses to determine whether a proposed land application site meets the minimum requirements for compliance with the current laws and rules and is therefore licensable as proposed, assist the public in understanding the licensing laws of the Septage Disposal and Licensure program, identify and discuss the potential environmental effects of the proposed land application activity if it is approved and becomes operational, discuss actions taken by the applicant and the enforceable measures and conditions of the license designed to mitigate the effects identified by DEQ during the review of the application, and seek public input to ensure DEQ has identified all the substantive environmental effects associated with the proposed land application of pumpings on the proposed property.

Benefits and Purpose of Project:

The land application of domestic septage is an economical and environmentally sound practice. A properly managed land application program provides benefits to agricultural land by the addition of moisture, organic matter and nutrients to the soil without adversely affecting public health. The land application of septage,

vault toilet-type waste, grease trap waste, and sump pumpings at this site will add nutrients, moisture, and improve the soil tilth for the continued production of agricultural crops and grasses.

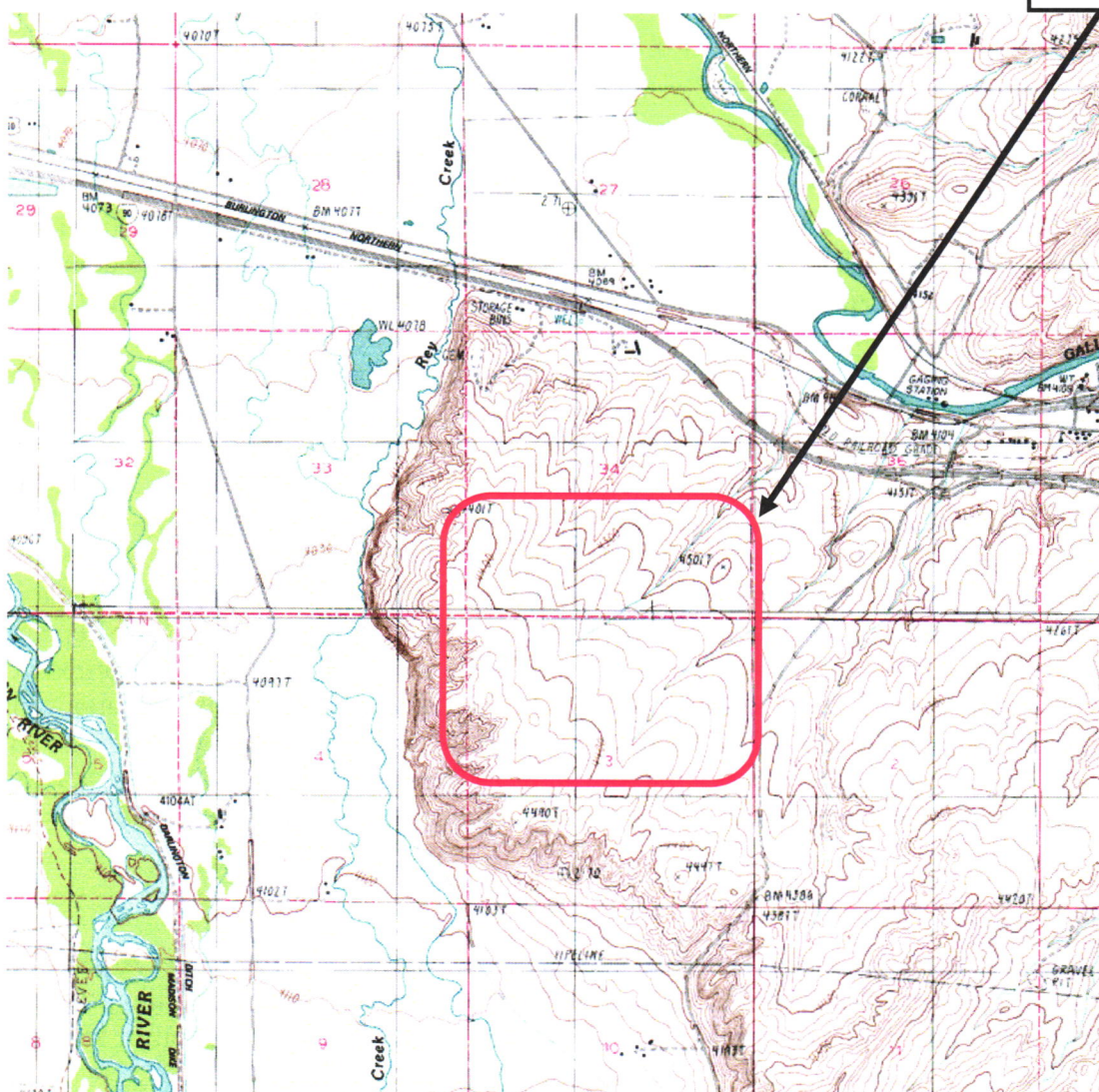
SECTION 2.0 – PROJECT DESCRIPTION:

Wesley Dooley, of TLC Landscape & Excavation, Inc., and Vianna Larrabaster of Robbins Septic – Sewer Master (applicants), have submitted a joint application for the approval of a site for the land application of septage, vault toilet-type waste, grease trap waste, and sump pumpings on approximately 750-acres of Stephen and Jacklyn McDonnell's property in Gallatin County. This is an expansion of an existing land application site that will provide additional rotation options between crops and land application. At the present time, the property is being used for the production of grass and grain. Land application will occur at this site only as-needed.

Site Location:

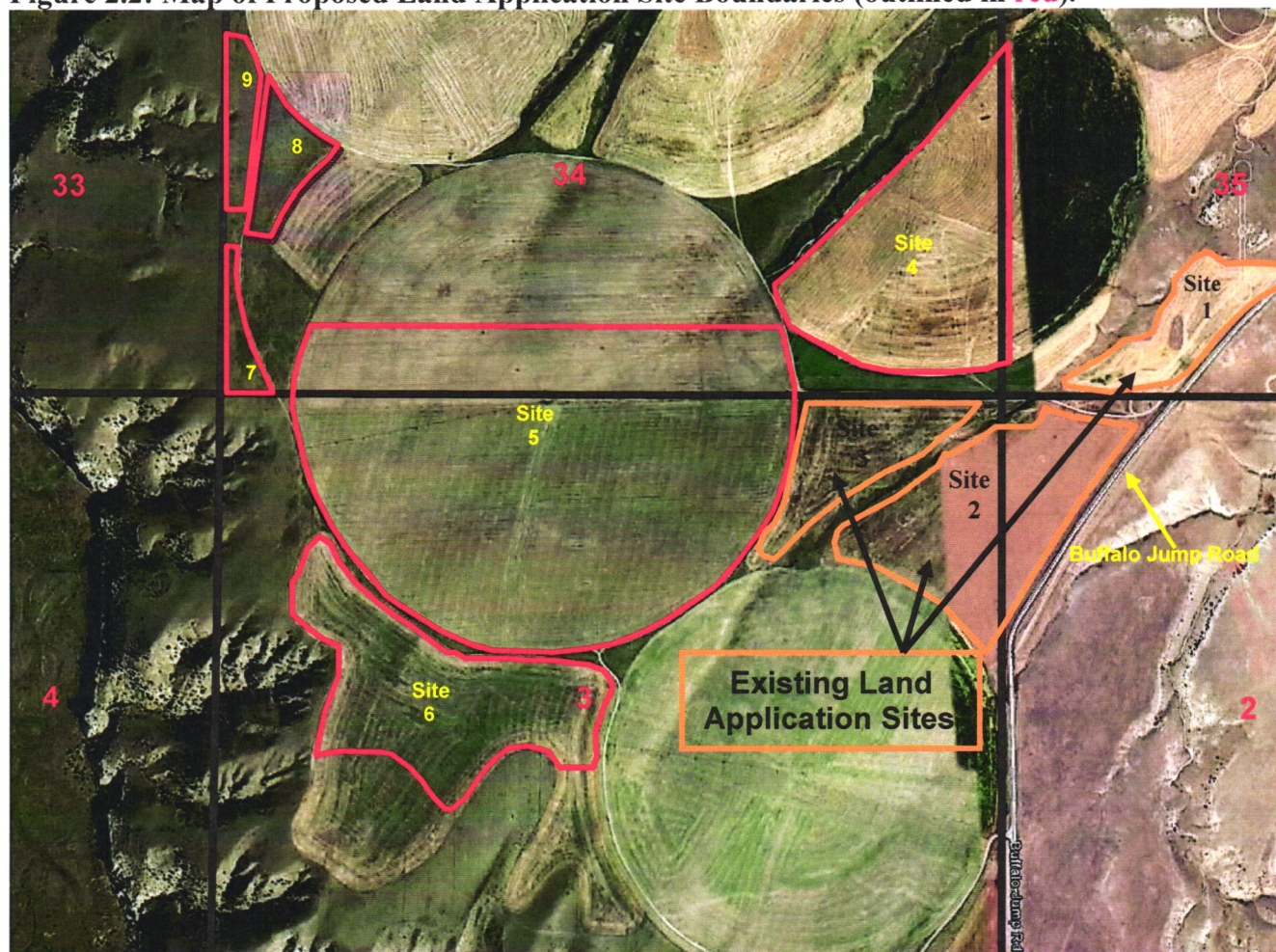
The proposed land application site is located on private property in Section 34, Township 2 North, Range 2 East, and in Section 3, Township 1 North, Range 2 East, Montana Principal Meridian, Gallatin County, Montana (Figure 2.1). As shown in Figure 2.2, the areas proposed for land application in Section 34 are located in the S/2 of the SW/4 of the SW/4, the S/2 of the SE/4 of the SW/4, the W/2 of the W/2 of the SW/4, the SE/4 of the SE/4, and the SE/4 of the NE/4 of the SE/4; the areas proposed for land application in Section 3 are located in the NW/4 and the NW/4 of the NE/4.

Figure 2.1: Proposed Land Application Site Location



Approximate Location of
Proposed Site

Figure 2.2: Map of Proposed Land Application Site Boundaries (outlined in red).



Site Setback Requirements:

The setbacks noted in Table 2.3 must be maintained by the applicant during land application activities.

Table 2.3: Land Application Site Setback Requirements

| ARM Reference | Setback Requirements |
|---------------|---|
| 17.50.809(1) | Pumpings may not be applied to land within 500 feet of any occupied or inhabitable building. |
| 17.50.809(2) | Pumpings may not be applied to land within 150 feet of any state surface water, including ephemeral or intermittent drainages and wetlands. |
| 17.50.809(3) | Pumpings may not be applied to land within 100 feet of any state, federal, county, or city-maintained highway or road. |
| 17.50.809(4) | Pumpings may not be applied to land within 100 feet of a drinking water supply source. |

| | |
|--------------|--|
| 17.50.809(6) | Pumpings may not be applied to land with slopes greater than 6%. |
| 17.50.809(8) | Pumpings may not be applied to land where seasonally high ground water is 6 feet or less below ground surface. |

Site Operation and Maintenance Requirements:

The land application of septage, vault toilet-type waste, grease trap waste, and sump pumpings is considered the beneficial use of a waste product when the material is applied in accordance with the regulations governing land application. The operational requirements for land application are outlined in Table 2.4.

Table 2.4: Land Application Site Operational Requirements

| ARM Reference | Site Restrictions/Requirements |
|----------------------|---|
| 17.50.809(10) | All non-putrescible litter must be removed from the land application site within 6 hours of application. |
| 17.50.809(12) | Pumpings may not be applied at a rate greater than the annual application rate (AAR) of the site for crop nitrogen requirement on an annual basis. |
| 17.50.810(1) | Pumpings may not be applied to flooded, frozen, or snow covered ground if the Pumpings may enter state waters. |
| 17.50.811(3) | <p>Pumpings may be applied only if the person first performs one of the following vector attraction and pathogen reduction methods:</p> <ul style="list-style-type: none"> • injection below the land surface so no significant amount remains on the land surface within one-hour of injection; • incorporation into the soil surface plow layer within 6 hours of application; • addition of alkali material so that the pH is raised to and remains at 12 or higher for a period of at least 30 minutes; or, • management as required by 17.50.810 when the ground is frozen |

The acreage available for land application will be rotated on an annual basis, so that parcels used one year will be cropped the following year. This rotation allows the vegetation or crop of choice to utilize the nitrogen and other nutrients added from the land application process.

Pumpings will be land applied using a dispersive mechanism, consisting of either a spreader bar or a splash plate. The dispersive mechanism applies the waste in a wide, thin, even layer at a beneficial rate. Pumpings will be incorporated into the soil surface plow layer with a tractor and tillage equipment within six-hours of application.

Land application will occur as-needed at a rate not exceeding the AAR in gallons per acre. For septage and vault toilet-type waste the AAR is calculated based upon the production of a specific crop or grass, as follows:

AAR = Crop Nitrogen Requirement/0.0026 for septage waste.

AAR = Crop Nitrogen Requirement/0.0052 for vault toilet-type waste.

At the present time, the landowner currently uses the property for the production of grass and wheat. Grass at this location has a crop nitrogen requirement of 75 pounds/acre. The resulting AAR for septage on grass cropped land is 28,846 gallons per acre; this is equal to approximately 1.06 inches of liquid per acre per year. For vault toilet-type waste, the AAR on grass cropped land is 14,423 gallons per acre. This is equal to 0.53 inches of liquid per acre.

Wheat at this location has a crop nitrogen requirement of 99 pounds/acre. The resulting AAR for septage on the wheat cropped land is 38,076 gallons per acre; this is equal to approximately 1.35 inches of liquid per acre per year. For vault toilet-type waste, the AAR for wheat cropped land is 19,038 gallons per acre; this is equal to 0.675 inches of liquid per acre. For comparison, the average annual precipitation received during the month of September is approximately equal to the maximum amount proposed for land application per acre per year at the proposed site (see Table 2.5). To further ensure that land applied wastes are not over-applied at the site, areas that receive both vault toilet-type waste and septage will be restricted to application at the lowest application rate; that is, to 14,423 gallons per acre per year for the grass-cropped properties, and to 19,038 gallons per acre per year for the wheat cropped properties.

Site Climate:

The climate in the area proposed for land application is typical of the semi-arid regime in the Logan area. Table 2.5 provides a summary of monthly climate information. The winters in the Logan area are long and moderately snowy; the summers are hot and dry. The average annual precipitation is approximately 11.56 inches. The majority of precipitation falls during the months of May and June, while December and February are the driest months.

Table 2.5: Monthly Climate Summary

| MANHATTAN, MONTANA (245351) | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|--------|
| Period of Record Monthly Climate Summary | | | | | | | | | | | | | |
| Period of Record : 4/15/1895 to 6/30/1983 | | | | | | | | | | | | | |
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Annual |
| Average Max. Temperature (F) | 31.4 | 35.9 | 43.7 | 57.8 | 68.4 | 75.6 | 81.9 | 81.5 | 68.1 | 57.4 | 41.5 | 32.5 | 56.3 |
| Average Min. Temperature (F) | 9.3 | 11.5 | 19.5 | 29.7 | 38.3 | 44.5 | 47.9 | 44.6 | 36.3 | 27.0 | 17.4 | 10.6 | 28.0 |
| Average Total Precipitation (in.) | 0.50 | 0.42 | 0.70 | 0.98 | 2.05 | 2.11 | 0.99 | 0.86 | 1.17 | 0.79 | 0.58 | 0.42 | 11.56 |
| Average Total SnowFall (in.) | 8.1 | 5.5 | 7.9 | 4.5 | 0.9 | 0.0 | 0.0 | 0.0 | 0.2 | 1.3 | 4.7 | 5.8 | 38.9 |
| Average Snow Depth (in.) | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Percent of possible observations for period of record. | | | | | | | | | | | | | |
| Max. Temp.: 0% Min. Temp.: 0% Precipitation: 97.5% Snowfall: 94.6% Snow Depth: 93.3% | | | | | | | | | | | | | |

Source: Western Regional Climate Center

SECTION 3.0 – ALTERNATIVES CONSIDERED:

The following provides a description of reasonable alternatives whenever alternatives are reasonably available and prudent to consider:

A decision by DEQ is triggered when the applicant upholds the request for licensure of the proposed activity at the proposed location. The applicants however, may at any time choose to withdraw the application. This would result in DEQ selecting the “no action” alternative, because a DEQ decision would not be necessary. If the applicant withdraws the application, the applicant could seek to locate a land application site elsewhere.

Alternative A: The “no action” alternative. This alternative will be implemented when a final decision by DEQ is not required because the applicant has chosen to withdraw the application for approval of the land application site.

Alternative B: The ‘license application denied’ alternative. This alternative will be implemented and DEQ will deny the new disposal site application if the application failed to meet the minimum requirements of the Septage Disposal Licensure Act and could not continue to be processed as submitted. If denied, the applicant has the option to modify the application for the current site and reapply for licensure, or could locate, investigate, and apply for licensure of another site.

Alternative C: The ‘license application approved’ alternative. This alternative will be implemented and DEQ will approve the application for licensure of the new disposal site if the application meets the requirements of the Septage Disposal Licensure Act.

In consideration of these alternatives, DEQ has not received a request by the applicant to withdraw the application for licensure. In addition, DEQ has determined the application meets the requirements of the Septage Disposal and Licensure Laws. Therefore, the potential environmental effects of Alternative C were evaluated for the proposed project based on the information provided, DEQ’s research on the site and area surrounding the proposed site, and DEQ’s site visit. The results of DEQ’s evaluation of potential environmental effects related to the proposed facility are summarized in Section 4.0.

SECTION 4.0 - EVALUATION OF POTENTIAL EFFECTS

Tables 4.1 and 4.2 of this section identify and evaluate the potential effects that may occur to human health and the environment if the land application site is approved. The discussion of the potential impacts only includes those resources potentially affected. If there is no effect on a resource, it may not be mentioned in the analysis.

Direct and indirect impacts are those that occur in or near the proposed project area and might extend over time. Often, the distinction between direct and indirect effects is difficult to define and for the purposes of this discussion, direct and indirect impacts are combined.

TABLE 4.1 - IMPACTS TO THE PHYSICAL ENVIRONMENT

| <u>PHYSICAL ENVIRONMENT</u> | Major | Moderate | Minor | None | Unknown | Attached |
|---|-------|----------|-------|------|---------|----------|
| 1. TERRESTRIAL, AND AQUATIC LIFE AND HABITATS | | | | ✓ | | ✓ |
| 2. WATER QUALITY, QUANTITY & DISTRIBUTION | | | | ✓ | | ✓ |
| 3. GEOLOGY | | | | ✓ | | ✓ |
| 4. SOIL QUALITY, STABILITY, AND MOISTURE | | | ✓ | | | ✓ |
| 5. VEGETATION COVER, QUANTITY & QUALITY | | | ✓ | | | ✓ |
| 6. AESTHETICS | | | | ✓ | | ✓ |
| 7. AIR QUALITY | | | | ✓ | | |
| 8. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES | | | ✓ | | | ✓ |
| 9. HISTORICAL AND ARCHAEOLOGICAL SITES | | | | ✓ | | ✓ |
| 10. DEMANDS ON ENVIRONMENTAL RESOURCES ON LAND, WATER, OR ENERGY | | | | ✓ | | |

TABLE 4.2 - IMPACTS TO THE HUMAN ENVIRONMENT

| <u>HUMAN ENVIRONMENT</u> | Major | Moderate | Minor | None | Unknown | Attached |
|--|-------|----------|-------|------|---------|----------|
| 1. SOCIAL STRUCTURES & MORES: | | | | ✓ | | |
| 2. CULTURAL UNIQUENESS & DIVERSITY: | | | | ✓ | | |
| 3. DENSITY & DISTRIBUTION OR POPULATION & HOUSING: | | | | ✓ | | |
| 4. HUMAN HEALTH & SAFETY: | | | | ✓ | | ✓ |
| 5. COMMUNITY & PERSONAL INCOME: | | | | ✓ | | |
| 6. QUANTITY & DISTRIBUTION OF EMPLOYMENT: | | | | ✓ | | |
| 7. LOCAL & STATE TAX BASE REVENUES: | | | | ✓ | | |
| 8. DEMAND FOR GOVERNMENT SERVICES: | | | ✓ | | | ✓ |
| 9. INDUSTRIAL, COMMERCIAL, & AGRICULTURAL ACTIVITIES & PRODUCTION: | | | | ✓ | | |
| 10. ACCESS TO & QUALITY OF RECREATIONAL & WILDERNESS ACTIVITIES: | | | | ✓ | | |
| 11. LOCALLY ADOPTED ENVIRONMENTAL PLANS & GOALS: | | | | ✓ | | |
| 12. TRANSPORTATION: | | | | ✓ | | ✓ |

ANALYSIS OF TABLE 4.1 - POTENTIAL IMPACTS TO THE PHYSICAL ENVIRONMENT

1.0 Terrestrial and Aquatic Life and Habitats

There are no wetlands or permanent surface water bodies located on the proposed site. Because no continuously active aquatic systems exist within the boundary of the proposed site, it is unlikely that there is any significant aquatic life or habitat anywhere on the site. Therefore, the impact to aquatic species is none.

An intensive survey was not performed to verify the presence of, or impact to, terrestrial or avian species within the land application site because the site is actively used for the production of grasses and wheat. There is adequate acreage of similar habitat available in the vicinity of the site to accommodate any species that may be forced to relocate. Consequently, any terrestrial or avian species will likely relocate to the adjacent locations. Therefore, the impact to terrestrial and avian species is minor.

2.0 Water Quality, Quantity, and Distribution

Surface Water

The Gallatin Valley extends over roughly 520 square miles of southwestern Montana. The valley is bounded by the Horseshoe Hills to the north, the Gallatin and Madison ranges to the south, the Bridger range to the east, and the Western Three Forks Valley to the west (Kendy and Tresch, 1996). The valley is drained by the Gallatin River and its tributaries. The main drainage mapped on the United States Geological Survey (USGS) Logan MT 1:24,000 quadrangle are Rey Creek, an unnamed creek, and the Gallatin River. Generally, surface water drains from the surrounding mountains via the East Gallatin River and the West Gallatin River, located to the southwest. Numerous irrigation ditches transport surface water from these rivers and other smaller streams to agricultural land throughout the valley, including the Logan area. (Kendy and Tresch, 1996).

The proposed land application sites are located approximately one-fourth of a mile east of Rey Creek, 2,900 feet west of the unnamed creek, and over 3,000 feet south of the Gallatin River. Pumpings will not be applied to land within 150 feet of any state surface water, including ephemeral drainages and wetlands, thereby negating any potential impact to surface waters.

Groundwater

Quaternary flood-plain alluvium is generally the most permeable material in the basin and the most reliable source of ground water. Transmissivity values range from 5,100 to 90,000 ft²/day, and average 27,000 ft²/day for alluvium of the Gallatin River. Quaternary and Tertiary alluvial-fan deposits have a wide range of hydraulic characteristics, indicating that they can provide sufficient supplies for many water uses including domestic, livestock, and irrigation. Basin-fill aquifers are unconfined throughout the Gallatin Valley. Bedrock is not an important aquifer in the basin.

The Montana Bureau of Mines and Geology, Groundwater Information Center (GWIC) database identifies 85 water wells within one mile of the site. Because the GWIC database locates wells by section, all wells in the sections containing the site and those surrounding the sites were included in this analysis (see Figure 4.1). Therefore, some of these wells shown may be located greater than one mile from the land application site.

Table 4.3 summarizes the well information by section. Because the data in GWIC is based on well drillers' records, the details are not field-verified for accuracy. Further, the GWIC database contains well information only for those drilling records that have been submitted; there may be additional wells in the area that are not contained in the database because the records have not been submitted to GWIC. Therefore, this analysis is based only on information contained in the GWIC database.

Section 34 has one GWIC-documented domestic well, one stock well, and one irrigation well. Section 3 has one GWIC-documented stock well. The wells nearest to the land application sites are greater than 85 feet deep and

have static water levels greater than 50 feet below ground surface. Pumpings will be land applied in a wide, thin, even layer at a rate not exceeding the AAR, and will be incorporated into the soil surface plow layer within six-hours of application. As a result, there will be no impact to groundwater or groundwater supply wells.

Figure 4.1: Location of Water Supply Wells (Site location outlined in red)

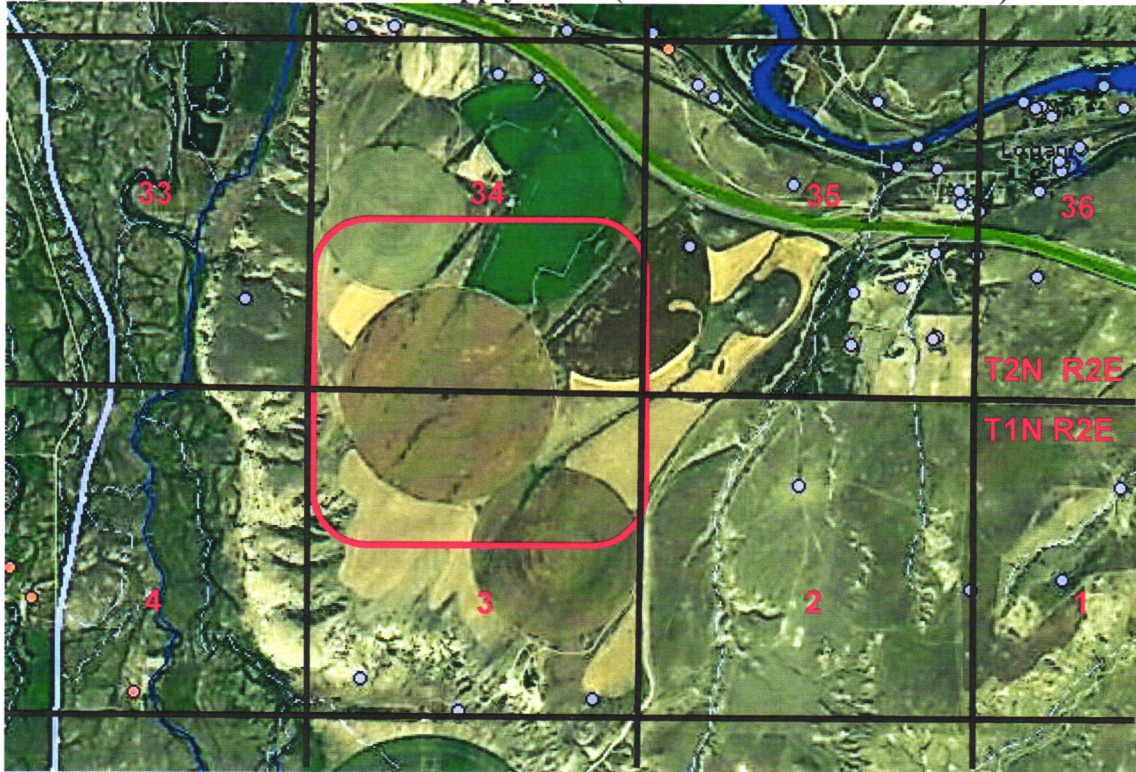


Table 4.3: Summary of Nearby Wells

| Township, Range, Section | Number of Wells | Total Depth (ft bgs) | | | Depth Water Enters (ft bgs) | | | Static Water Level (ft bgs) | | | Yield (gpm) | | |
|-----------------------------|--------------------|-------------------------|-------|-------|--------------------------------|-------|-------|--------------------------------|-------|-------|-------------|-------|-------|
| | | Min | Max | Ave | Min | Max | Ave | Min | Max | Ave | Min | Max | Ave |
| T2N, R2E, S25 | 0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| T2N, R2E, S26 | 2 | 40 | 240 | 140 | 40 | 238 | 139 | 8 | 120 | 64 | 15 | 50 | 32.5 |
| T2N, R2E, S27 | 15 | 29 | 200 | 80.7 | 30 | 98 | 57.4 | 6 | 47 | 22 | 8 | 60 | 27 |
| T2N, R2E, S33 | 1 | 100 | 100 | 100 | 85 | 85 | 85 | 12 | 12 | 12 | 50 | 50 | 50 |
| T2N, R2E, S34 | 2 | 206 | 260 | 233 | 100 | 120 | 110 | 40.4 | 40.85 | 40.6 | 300 | 1200 | 750 |
| T2N, R2E, S35 | 22 | 41 | 330 | 190.3 | 20 | 310 | 150.6 | 26 | 181 | 103.5 | 3 | 100 | 26.7 |
| T2N, R2E, S36 | 32 | 40 | 260 | 106.5 | 15 | 238 | 81.5 | 8 | 100 | 41.0 | 1 | 150 | 32.9 |
| T1N, R2E, S1 | 2 | 80 | 145 | 112.5 | 17 | 130 | 73.5 | 15 | 106 | 60.5 | 20 | 25 | 22.5 |
| T1N, R2E, S2 | 2 | 18.5 | 137 | 77.8 | 18.5 | 137 | 77.8 | 106 | 106 | 106 | 0.1 | 20 | 10.1 |
| T1N, R2E, S3 | 1 | 85 | 85 | 85 | 65 | 65 | 65 | 51 | 51 | 51 | 30 | 30 | 30 |
| T1N, R2E, S4 | 4 | 8 | 48 | 28.3 | 36 | 41 | 38.5 | 4 | 5 | 4.5 | 30 | 50 | 40 |
| T1N, R2E, S9 | 0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| T1N, R2E, S10 | 2 | 45 | 240 | 142.5 | 220 | 220 | 220 | 138 | 138 | 138 | 100 | 100 | 100 |
| T1N, R2E, S11 | 0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| T1N, R2E, S12 | 0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| All | 85 | 8 | 330 | 122.9 | 15 | 310 | 97.8 | 4 | 181 | 57.0 | 0.1 | 200 | 51.1 |

(Source: Montana Bureau of Mines and Geology, Ground Water Information Center)

The total depth column is the depth drilled, which may be deeper than the bottom of the well as completed. Static water level is the level of water measured in the well at the time of installation. Yield is the amount of water the well is expected to be capable of producing as reported by the well driller. All data is based upon driller's logs and may not be reported for every well.

3.0 Geology

The proposed land application site is located in the north-central portion of the Gallatin Valley in northwestern Gallatin County. The Gallatin Valley occupies the eastern half of the Three Forks basin, a broad basin within the Rocky Mountains. The general topography of the area is characterized by mountains that surround the valley to the north, east, and south. The Madison Plateau, a broad, low relief topographic feature, forms the western boundary of the Gallatin Valley and separates the Gallatin River drainage basin from the Madison River drainage basin.

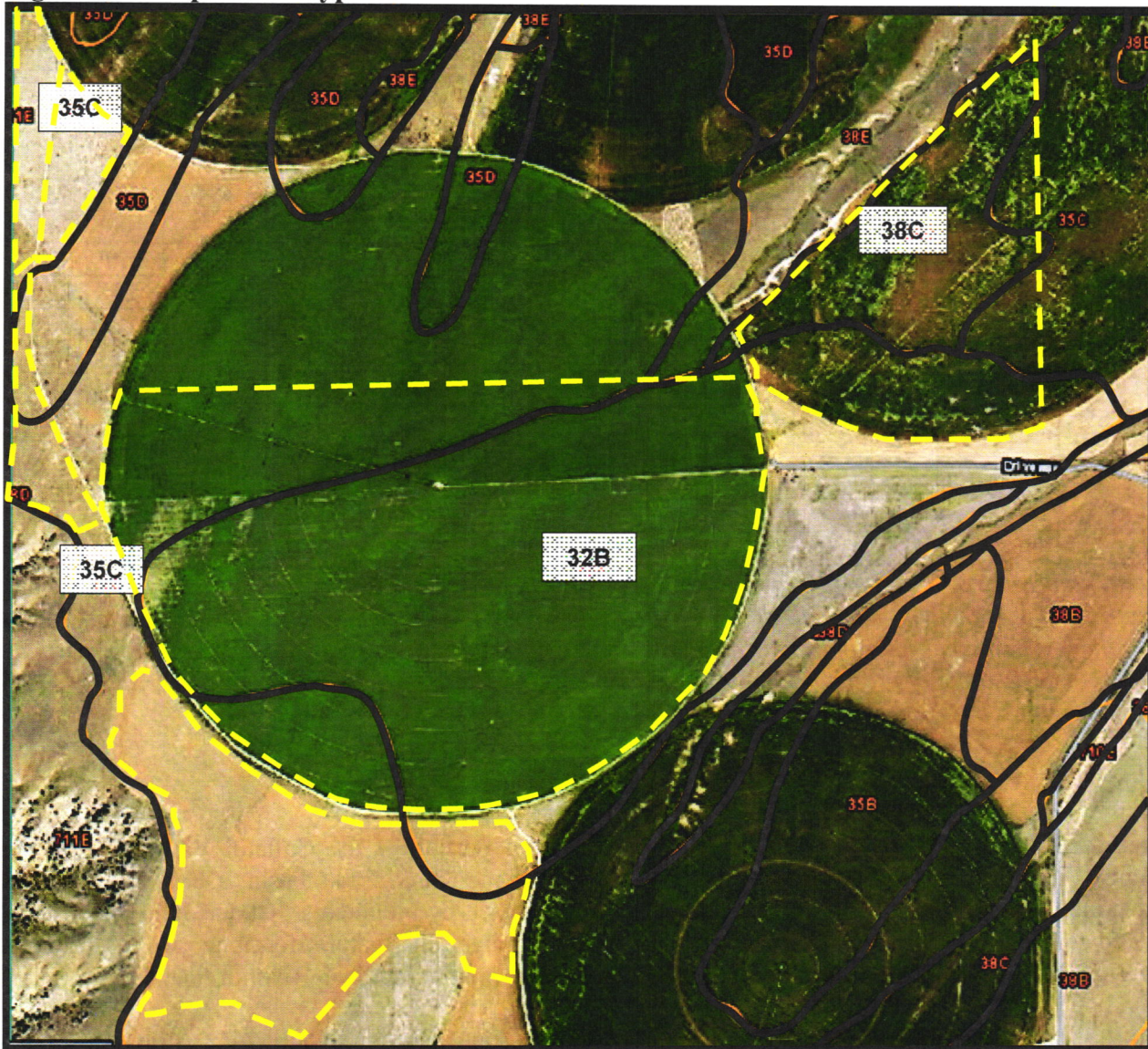
The Gallatin Valley basin is filled with sedimentary rocks that have been overlain by alluvium. Alluvium is the loose, unconsolidated sediments that have been eroded from upgradient areas and redeposited by rivers and streams. Near Bozeman Hot Springs, the alluvial cover is estimated to be 70 feet thick (Kendy and Tresch, 1996). The mountains surrounding the basin are composed of metamorphic, sedimentary and igneous bedrock. This bedrock is generally less permeable than the unconsolidated alluvium. Because land application of septage is confined to the soil plow layer, there will be no impact to the geology in the area.

4.0 Soil Quality – Stability & Moisture

The soil types identified at the proposed land application site consist of the Amesha loam, the Kalsted sandy loam, the Chinook fine sandy loam, and the Chinook-Kalsted loams (Figure 4.2). The areas proposed for land application within the 750 acre parcel are outlined in yellow on Figure 4.2. The Amesha loam, 0 to 4% slopes, and Kalsted sandy loam, 4 to 8% slopes cover the majority of the areas where land application is proposed. The Amesha loam is a well-drained loam to silt loam soil with a high available water capacity and moderately-high to high permeability. The Kalsted sandy loam is somewhat excessively drained with a moderate available water capacity and high permeability. The Chinook fine sandy loam, 4 to 8% slopes, consists of fine

sandy loam and sandy loam, and are well-drained with a moderate available water capacity and high permeability. All of the soils in the area have a depth to the water table of over 85 feet.

Figure 4.2: Map of Soil Types



(From: USDA-NRCS, Web Soil Survey, Gallitan County, Montana)

Soil Key (Figure 4.5)

32B: Amesha loam, 0 to 4% slopes

35C: Kalsted sandy loam, 4% to 8% slopes

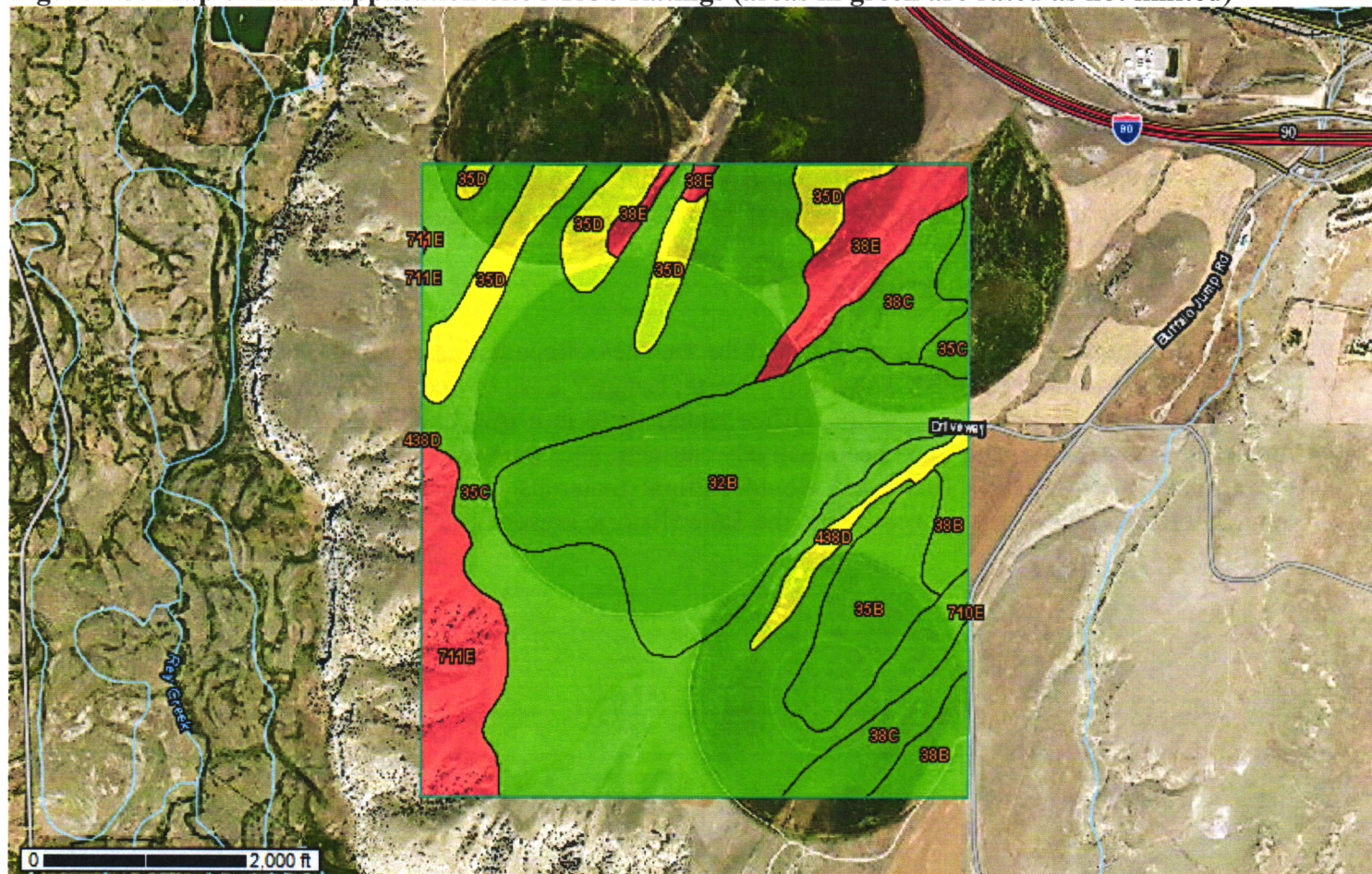
38C: Chinook fine sandy loam, 4% to 8% slopes

The soil types in the areas proposed for land application are all rated as “not limited” for the disposal of wastewater according to the Natural Resources Conservation Service (shown in green on Figure 4.3). The areas shown in yellow and red on Figure 4.3 will not be used for land application. A rating of “not limited” indicates that the soil has features that are very favorable for the specified use and thus good performance and very low maintenance can be expected. This rating is based on the soil properties that affect absorption, plant growth, microbial activity, erodibility, and the rate and method by which the material is applied. The rating takes into consideration the general values of the soil saturated hydraulic conductivity, depth to a

water table, ponding, the soil sodium absorption ratio, the depth to bedrock or hardpan layer, available water capacity, salinity, and bulk density.

The soil, pasture grasses, and wheat at the site will benefit from the land application of septage. The septage will increase the soil tilth and add organic matter and moisture. This impact will result in an increased production of grasses and crops at the site from the added moisture and nutrients.

Figure 4.3: Map of Land Application Site NRCS Ratings (areas in green are rated as not limited)



(From: USDA-NRCS, Web Soil Survey, and Gallatin County, Montana)

5.0 Vegetation Cover, Quantity and Quality

The vegetative cover, quantity and quality of the land and its crops will be enhanced by the proposed activity. The land application of domestic septage provides benefits to agricultural land by the addition of organic matter, moisture and nutrients to the soil. As discussed in Section 4.0 above, will result in an increased production of grasses and crops at the site from the added moisture and nutrients.

6.0 Aesthetics

This site is located on property that is actively farmed and not located on a prominent topographical feature. It is not visible from a highly populated area. The application of septage is similar to the day to day activities of farming and ranching and will not cause a change in the aesthetics of the area.

8.0 Unique, Endangered, Fragile, Or Limited Environmental Resources

A search of the Montana Natural Heritage Program indicated the Hoary Bat, Golden Eagle, Great Blue Heron, Ferruginous Hawk, Veery, Bobolink, Pinyon Jay, Clark's Nutcracker, Long-billed Curlew, Sage Thrasher, Loggerhead Shrike, Long-billed Curlew, Greater Short-horned Lizard, Arctic Grayling, Subterranean Amphipod, Annual Indian Paintbrush, Mealy Primrose, and the Ute Ladies Tresses are listed as species of concern. Designation as a species of concern is not a statutory or regulatory classification. Instead, these designations provide a basis for resource managers and decision-makers to make proactive decisions regarding species conservation. There are no wetlands or permanent surface water bodies located on the proposed site. An intensive site survey was not conducted to verify the presence of, or impact to, sensitive, unique, endangered, or fragile species within or adjacent to the proposed land application site. However, the site is currently used for the active production of grasses and wheat. Therefore, such species would relocate naturally due to these activities. In addition, due to the limited development and human population adjacent to the proposed site, there is adequate acreage of similar habitat available in the vicinity to accommodate any relocated species. Therefore, the impact to resources is minor.

9.0 Historical and Archaeological Site

A cultural resource file search was conducted for the sites. Records indicate there have been no previously recorded sites within Section 34, Township 2 North, Range 2 East, or Section 3, Township 1 North, Range 2 East. The State Historic Preservation Office stated there is a low likelihood cultural properties will be impacted because the site has been actively farmed and therefore a cultural resource inventory is unwarranted at this time. However, should cultural materials be inadvertently discovered during land application activities at this proposed site, the State Historic Preservation Office will be notified.

SECTION 4.2 - POTENTIAL IMPACTS OF THE PROPOSED LAND APPLICATION SITE ON THE HUMAN ENVIRONMENT (See Table 4.2)

4.0 Human Health & Safety

The septage, vault toilet-type waste, grease trap waste, and sump pumpings will be land applied at the site on an as needed basis. Pumpings will be land applied using a dispersive mechanism, consisting of either a spreader bar or a splash plate. The dispersive mechanism applies the waste in a wide, thin, even layer at a beneficial rate. Pumpings will be incorporated into the soil surface plow layer with a tractor and tillage equipment within six-hours of application. There are no additional health or safety concerns when the site is operated in accordance with the Septage Disposal regulations. Therefore, there will be no impact on human health and safety .

8.0 Demand for Government Services

The Gallatin County Environmental Health Department and DEQ Solid Waste Section will conduct periodic inspections at the site. Therefore, there will be a minor impact for demand for government services.

12.0 Transportation

The land application site will be accessed off Buffalo Jump Road. Buffalo Jump Road currently supports traffic to rural homes, farms and ranches, including heavy equipment associated with the current agricultural activities in the area. The site will be used on an as needed basis by septic pumpers and will not cause a significant increase in traffic on Buffalo Jump Road. There will be no impact to transportation..

SECTION 5.0 CONCLUSIONS AND RECOMMENDATIONS

Evaluation of mitigation, stipulations, and other controls enforceable by the agency or another government agency:

The proposed land application site and Operation and Maintenance (O&M) Plan will meet the requirements of the Montana Septage Disposal and Licensure Law, Air and Water Quality Acts, and other Montana environmental laws and regulations, as well as county ordinances. Adherence to the regulations and the approved O&M Plan will mitigate the potential for harmful releases and impacts to human health and the environment by the proposed activity at the site.

Recommendation:

The DEQ's recommendation is to distribute the Draft EA to adjacent landowners and interested persons for 30 days to satisfy the public notification and participation requirements of MEPA. Substantive comments received during the 30-day public participation period in response to the Draft EA will be considered in the final decision on the proposed action.

Findings:

DEQ has determined that the proposed site, located on rural, private property, will have a minor impact on the surroundings. Access to the site will be controlled and land application will be performed according to the DEQ approved O&M Plan. Site activities will be verified by periodic inspections performed by DEQ and/or Gallatin County personnel to ensure that the potential risk of adverse effects on human health and the environment resulting from land application activities at the site are minimized.

Other groups or agencies contacted or which may have over-lapping jurisdiction:

Gallatin City-County Health Department

Individuals or groups contributing to this EA:

Wesley Dooley of TLC Landscape & Excavation
Vianna Larrabaster of Robbins Septic – Sewer Master
Montana Natural Heritage Program
Montana Historical Society State Historic Preservation Office
Natural Resource Information System

References:

Western Regional Climate Center, 2215 Raggio Parkway, Reno NV 89512-1095
Montana Tech of the University of Montana, 2012, Montana Bureau of Mines and Geology, Groundwater Information Center, <http://mbmggwic.mtech.edu/>
United States Department of Agriculture, 2012, Natural Resources Conservation Service, Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

EA prepared by:

Bob McWilliams, John Collins and Fred Collins - DEQ Permitting and Compliance Division, Waste and Underground Tank Management Bureau, Solid Waste Section.

Date: June 22, 2015